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(71) 出願人 (日本についてのみ): ダイワボウポリテック株式会社 (DAIWABO POLYTEC CO., LTD.) [JP/JP]; 〒541-0056 大阪府 大阪市 中央区久太郎町3丁目6番8号 Osaka (JP).

(72) 発明者; および

(75) 発明者/出願人 (米国についてのみ): 山本 博之 (YAMAMOTO, Hiroyuki) [JP/JP]; 〒675-0021 兵庫県 加古川市 尾上町安田200-2 Hyogo (JP). 立野 仁志 (TATENO, Hitoshi) [JP/JP]; 〒675-0163 兵庫県 加古郡 播磨町古宮455-1-223 Hyogo (JP). 上笹 利夫 (KAMISASA, Toshio) [JP/JP]; 〒674-0067 兵庫県 明石市 大久保町大久保町15-1-408 Hyogo (JP).

[続葉有]

(54) Title: SEPARATOR FOR ORGANIC ELECTROLYTE BATTERY, PROCESS FOR PRODUCING THE SAME AND ORGANIC ELECTROLYTE BATTERY INCLUDING THE SEPARATOR

(54) 発明の名称: 有機電解液電池用セパレータとその製造方法及びこれを組み込んだ有機電解液電池



(57) Abstract: A separator for organic electrolyte battery, comprising a wet heat gelling resin capable of gelling upon being heated in the presence of moisture and a nonwoven fabric comprising fibers other than those capable of wet heat gelling, wherein the other fibers are fixed by a gel resulting from wet heat gelling of the wet heat gelling resin and wherein the average pore diameter, as measured in accordance with ASTM F 316 86, of the nonwoven fabric is in the range of 0.3 to 5  $\mu$ m while the maximum pore diameter thereof is in the range of 3 to 20  $\mu$ m. Thus, the wet heat gelling resin enables fixing the other fibers constituting the nonwoven fabric and enables obtaining desired average pore diameter and maximum pore diameter. An organic electrolyte battery of high safety, minimized short-circuiting and high battery performance can be provided thereby.

(57) 要約: 本発明の有機電解液電池用セパレータは、水分存在下で加熱することによってゲル化し得る湿熱ゲル化樹脂と、他の繊維を含む不織布で構成され、前記他の繊維は前記湿熱ゲル化樹脂が湿熱ゲル化したゲル化物で固定されており、ASTM F 31686に

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(74) 代理人: 特許業務法人池内・佐藤アンドパートナーズ (IKEUCHI SATO & PARTNER PATENT ATTORNEYS); 〒530-6026 大阪府 大阪市 北区天満橋1丁目8番30号OAPタワー26階 Osaka (JP).

(81) 指定国 (国内): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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添付公開書類:

- 国際調査報告書
- 補正書・説明書

2文字コード及び他の略語については、定期発行される各PCTガゼットの巻頭に掲載されている「コードと略語のガイダンスノート」を参照。

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/JP03/13520

A. CLASSIFICATION OF SUBJECT MATTER  
Int.Cl.<sup>7</sup> H01M2/16, D21H13/16

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
Int.Cl.<sup>7</sup> H01M2/16, D21H13/16

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
Jitsuyo Shinan Koho 1926-1996 Toroku Jitsuyo Shinan Koho 1994-2003  
Kokai Jitsuyo Shinan Koho 1971-2003 Jitsuyo Shinan Toroku Koho 1996-2003

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                              | Relevant to claim No. |
|-----------|---|-----------------------|
| X         | JP 2002-134088 A (Daiwabo Co., Ltd.),<br>10 May, 2002 (10.05.02),<br>Claims 1 to 11; examples<br>(Family: none) | 1-32                  |
| X         | JP 2002-203530 A (Daiwabo Co., Ltd.),<br>19 July, 2002 (19.07.02),<br>Claims 1 to 9; examples<br>(Family: none) | 1-32                  |

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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|---|--|
| * Special categories of cited documents:  | "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  |
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| "O" document referring to an oral disclosure, use, exhibition or other means  |  |
| "P" document published prior to the international filing date but later than the priority date claimed  |  |

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Authorized officer

Facsimile No.

Telephone No.